

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
31 December 2003 (31.12.2003)

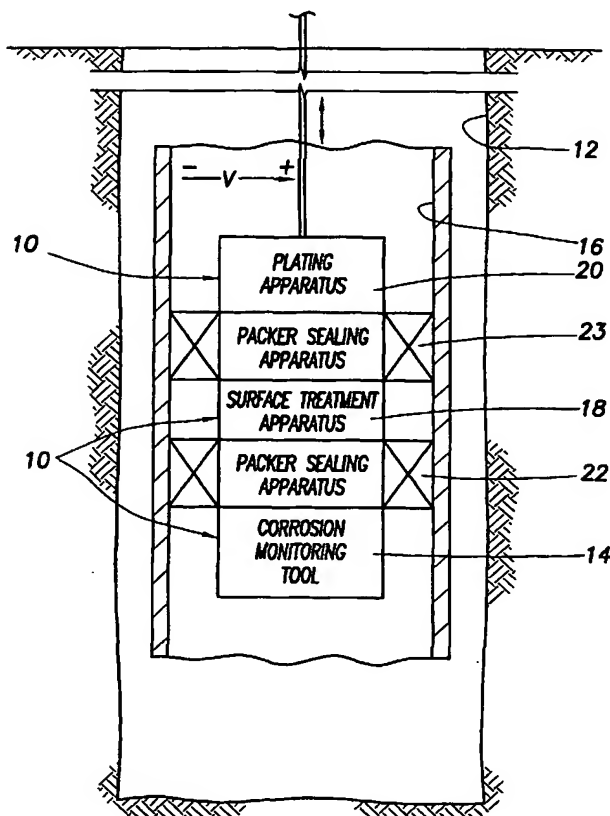
PCT

(10) International Publication Number
WO 2004/001178 A2

- (51) International Patent Classification⁷: **E21B** P.O. Box 71, Craigmuir Chambers, Road Town, Tortola (VG).
- (21) International Application Number: PCT/US2003/014993 (71) Applicant (for CA only): **SCHLUMBERGER CANADA LIMITED** [CA/CA]; 2400, 801 6TH AVENUE S.W., Calgary, Alberta T2P 3W2 (CA).
- (22) International Filing Date: 14 May 2003 (14.05.2003) (71) Applicant and (72) Inventor (for US only): **ZHANG, Wenlin** [CN/US]; 4606 Foresthome Drive, Missouri City, TX 77459 (US).
- (25) Filing Language: English (72) Inventor; and (75) Inventor/Applicant (for US only): **WALTER, Joe** [US/US]; 9 Talshire Lane, Sugar Land, TX 77479 (US).
- (26) Publication Language: English (74) Agent: **BOUCHARD, John, H.**; P.O. Box 219, Richmond, TX 77406-0219 (US).
- (30) Priority Data: 60/390,586 21 June 2002 (21.06.2002) US (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
- (71) Applicant (for FR only): **SERVICES PETROLIERS SCHLUMBERGER** [FR/FR]; 42, rue Saint-Dominique, F-75007 Paris (FR).
- (71) Applicant (for all designated States except CA, FR, US): **SCHLUMBERGER HOLDINGS LIMITED** [—/—];

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR DOWNHOLE PIPE OR CASING REPAIR



(57) Abstract: A downhole pipe or casing repair method and apparatus includes a corrosion monitoring tool adapted for examining an interior of a pipe or tubing or casing to create a record of the condition of said interior of said pipe, a surface treatment apparatus for cleaning said interior of said pipe, a plating apparatus for plating a new surface over the interior of said pipe after the surface treatment apparatus cleans the interior of said pipe, a packer sealing apparatus for sealing the surface treatment apparatus from the corrosion monitoring tool, and another packer sealing apparatus for sealing the plating apparatus from the surface treatment apparatus. The corrosion monitoring tool will examine the interior of the pipe, the surface treatment apparatus will clean the interior of the pipe, the plating apparatus will plate a new surface over the newly cleaned interior of the pipe, and the corrosion monitoring tool will re-examine the interior of the pipe after the plating step is completed. This abstract is provided for the sole purpose of aiding a patent searcher; it is provided with the understanding that this abstract shall not be used to interpret or limit the scope or meaning of the claims.



GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— *of inventorship (Rule 4.17(iv)) for US only*

Published:

— *without international search report and to be republished upon receipt of that report*

(84) **Designated States (regional):** ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.